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Daniel C. Eaton

BULLETIN
OF THE
TORREY BOTANICAL CLUB.

Vol. 22.

Lancaster, Pa., August 31, 1895.

No. 7.

Daniel Cady Eaton,
1834-1895.

BY WILLIAM ALBERT SETCHELL.

(With portrait.)

The death of Prof. Daniel C. Eaton, at his home, in New Haven, on June 30, 1895, removes from among us the last link intimately connecting the systematic botany of the present with that of the past. During the first half of the present century the most influential writer upon, and teacher of, botany in this country was Amos Eaton, Senior Professor of the Rennselaer Institute at Troy, N. Y., and grandfather of the subject of our sketch. His Manual was the inspiration and guide of our earlier botanists, and continued to be until supplanted by the works of Torrey and Gray. The botanists earlier than and contemporaneous with Amos Eaton were writers of Floras, but Amos Eaton, himself, was a teacher of great ability and awakened, even among the members of the New York Legislature, so it is said, a deep and widespread interest in natural history. From him John Torrey learned the rudiments of botany, and was able to broaden and deepen the knowledge and interest in botanical things of Asa Gray, whose first knowledge of the subject came from Amos Eaton's text-books. Of Gray's influence upon the botany, not only of this country, but of the world, it is needless to speak, so present is it with all of us. Of Gray's associates and pupils two were more intimately thrown together than any others, and these

were Daniel C. Eaton and Sereno Watson. With them we may say, perhaps, that the direct line of succession ends. Others there are, no less illustrious, but they have departed more widely than these two from the direct line of work, and the mantle, while it has fallen upon most worthy shoulders, yet lacks the accumulated traditions which were a precious heritage in themselves.

Daniel C. Eaton, as he was called to distinguish him from his cousin, D. Cady Eaton, was the son of Amos B. Eaton and Elizabeth Selden, and was born at Fort Gratiot, Mich., on February 12, 1834. His father was an officer in the Regular Army of the United States, had served with distinction in the Seminole and Mexican Wars, had risen to the office of Brigadier General, and was entrusted with the very important work of supervising the Commissary Department as Quartermaster General during the Civil War. Although he never had any special scientific education, as had a sister and a brother who became teachers in these lines, yet he possessed a keen interest in natural history and helped to direct his son's education whenever the roving life of an army officer allowed him to do so. Mrs. General Eaton was a sister of Samuel K. and Henry R. Sheldon, two distinguished jurists of Rochester, N. Y.

Daniel C. Eaton's early training was obtained in different places. For a time the family resided in New York City, and during the Mexican War the mother and children remained at Rochester. Later he attended the Rennselaer Institute for a short time and General Russell's Military School in New Haven, while preparing for college. His final preparation was made with a private tutor, and he entered Yale in the autumn of 1853.

During his college course he distinguished himself particularly in Latin, and he retained during the rest of his life an especial fondness for this language and its literature. But his chief interest lay in botanical pursuits, and this distinguishing trait is a prominent feature in the recollections of his classmates with whom he was a great favorite. He never had a doubt as to his future vocation, and his ambition was to become the professor of his favorite subject in his alma mater, the institution where his grandfather had received a part of his own botanical and chemical education under Professors Silliman and Ives.

During his undergraduate days he derived much pleasure and profit from his correspondence with Torrey, Gray and Sullivant, to whom he sent his specimens and to whom he applied for counsel. His herbarium still contains many of these specimens with notes from these distinguished authorities. Such was his advancement even then that in his junior year he published a short paper in "Silliman's Journal" on three new ferns from California, his first contribution to science upon a group to which he devoted later his chief attention.

He obtained the degree of B. A. from Yale College in 1857, and spent the three succeeding years in the Lawrence Scientific School of Harvard University in special botanical studies, under the direction of Professor Asa Gray. He devoted himself particularly to the study of the ferns and produced several papers. He enumerated and described the new species of ferns from the collections made by Charles Wright of the Rodgers Exploring Expedition in Cuba and Japan, for Torrey's Flora of the Mexican Boundary Survey and for Chapman's Flora of the Southern United States. Finally, in 1860, he presented to the faculty of Harvard University, as his thesis for the purpose of obtaining the degree of Bachelor of Science, his "*Filices Wrightianae et Fendlerianae*."

During the Civil War his botanical studies were interrupted and he held the position of clerk and inspector of stores in the Commissary Department of the United States Army in New York City. He, however, had an opportunity of associating more intimately with Professor Torrey and of increasing his store of botanical tradition.

After the war, in 1864, he was elected to the chair of botany in Yale College, which had been established by some of his friends, and his duties were assigned to the Sheffield Scientific School, with which he continued to be principally identified. A few years later he was appointed University Professor, and continued to give instruction in both departments until the end of his life. He took up his residence in New Haven in the fall of 1864, and in 1866 he married Caroline, daughter of Treadwell Ketcham, of New Haven. Mrs. Eaton, a son, and a daughter survive him.

Professor Eaton made two trips to Europe, one early in 1866 and another in 1887. As the later trip was taken for the benefit

of his health, he visited little and indulged in practically no botanical study. In 1866 he visited the botanists and botanical collections at Florence, at Geneva, at Paris, and in London at the British Museum and the gardens at Kew. At the latter place he spent two weeks in the careful study of ferns, working assiduously among the collections, every courtesy and every assistance being rendered him by Sir Joseph Hooker, then Director of the Royal Gardens.

He took many collecting trips, especially into New Jersey, with Gray, Canby and others, to the White Mountains of New Hampshire, and a portion of the last summer of his life was spent at Shelburne, N. H., with Professors Farlow and Penhallow in collecting the *Sphagna* of that region. During the summer of 1869 he spent a month botanizing among the mountains of Utah, as the guest of Clarence King, who was in charge of the geological surveys of the fortieth parallel.

Even in his undergraduate life his preference for the cryptogamous plants was marked, and he will be remembered chiefly for the work he did among them. His knowledge of the phaenogamous species, nevertheless, was very extensive and exact. He preferred, however, to entrust the work of publishing upon these plants to Professor Gray. His attainments in this line are shown, however, in the masterly way in which he has treated the *Compositae* of King's Expedition, and the additional material and other aid afforded by him in the preparation of the whole of the botany of that expedition is gracefully and effectively set forth in Watson's general introduction. Besides this work his published observations on the flowering plants are few, although he retained much interest in them even until the last.

His chief work from the beginning (1856) until about 1883 lay among the ferns and their immediate allies. His first several papers were devoted to enumerations of various collections of ferns and descriptions of new species. He contributed the accounts of the Vascular Cryptogams to Torrey's Botany of the United States and Mexican Boundary Survey, to Chapman's Flora of the Southern United States, to Gray's Manual of Botany of the Northern United States (both to the 5th and the 6th editions), to Gray's Field, Forest and Garden Botany, to the Botany of

King's Survey, to that of Wheeler's Survey, and to the Botany of California.

In 1873 he began a series of notices of "New or Little Known Ferns of the United States," directly leading up to his great work on "The Ferns of North America." This classic and well-known work consists of two royal octavo volumes containing 683 pages and illustrated by 81 colored plates, after drawings by Emerton and Faxon, representing 149 species, all that were known at the time from North America north of Mexico. They were issued in 1879 and 1880, but the notes on ferns in the *BULLETIN* of the Torrey Botanical Club were continued actively until 1883, after which there were very few articles from his pen on this subject.

He was for many years much interested in Algæ and spent a considerable time upon them. He spent a portion of one summer with the United States Fish Commission at Noank, engaged in the study of this group. He published very little upon them, however, limiting himself to a list of Eastport Algæ, another of those collected by Edward Palmer in Florida and the Bahama Islands, and directions for mounting and preserving specimens. He was associated with Professor W. G. Farlow and Dr. C. E. Anderson in issuing the *Algae Americae-Borealis Exsiccatae*.

The later years of Professor Eaton's life were devoted to the study of the mosses and liverworts. His interest in these plants was well advanced even in his undergraduate days. He collected much and carried on a considerable correspondence with W. S. Sullivan in regard to the determination of his specimens. His knowledge of the New Haven Moss and Hepatic Flora was very extensive, and he contributed the account of these plants to the Catalogue of Plants growing within 30 miles of New Haven, published by the Berzelius Society of the Sheffield Scientific School in 1878. His other publications on these groups are confined to lists of Patagonian species and a few notes on new or rare species of the United States.

He spent a great deal of time in the study of the Hawaiian species, both of Mosses and Hepatics, and had almost completed the determination of the species of the various collections in his possession. He spoke to the writer only a few weeks before his

death of issuing a list with notes and descriptions of new species. His collection of Polynesian Mosses is very large and complete.

For a number of years he had been collecting and studying the various species of the genus *Sphagnum*. In 1893 he issued a list of the North American species and a prospectus of a proposed distribution, undertaken in connection with Mr. Edwin Faxon, to be called "*Sphagna Boreali-Americana Exsiccata*." He spent much time in collecting, preparing and determining sets, and was very particular about the excellence and homogeneity of his specimens. Many of the sets are practically ready for distribution, and it is to be hoped that these, at least, may be issued at some future time.

Professor Eaton prepared the botanical definitions for Webster's International Dictionary, and contributed many reviews of botanical books to the various periodicals. During the last four or five years he has contributed the botanical reviews to the "Nation" and to the "New York Evening Post," touching upon current botanical changes and opinions in the graceful and discerning way characteristic of him.

Professor Eaton was one of the original members of the Torrey Botanical Club, and remained an active member for a number of years. Later he became a corresponding member. He was a regular and active contributor to the BULLETIN, especially during the earlier years of its existence.

Besides his botanical interests Professor Eaton had many others. He was an enthusiastic lover of athletic sports, of archery, of baseball and football, and of fishing and hunting. He was an ardent student of anthropology and genealogy. He was a member of several genealogical societies and made a considerable study of the genealogies of the Eaton and Selden families, and published the results in several papers. He was also Governor of the Connecticut Society of the Colonial Wars for some years.

In politics Professor Eaton was a Republican until 1884, but from that time took an active part in the independent movement in Connecticut.

His interest in the classics, both of the Latin and of the Greek, was very great, and he much deplored the present lack of facility and even use of proper Latin, both in the choice of generic

and specific names and in descriptions. He strongly advocated the publication of a Latin description in the case of a new species. He was very impatient of the use of barbarisms in Latin nomenclature.

As a man, Professor Eaton was possessed of a most pleasant personality, winning the esteem and love of all who had the privilege of acquaintanceship with him. He was generous to the extreme and counted neither time nor trouble when performing any act of friendship.

As a botanist he was careful to an extraordinary degree. No work of his was ever slovenly or hastily done, and he had little sympathy with work of that kind on the part of others. His instruments were most carefully kept in order, his microscopic preparations most neatly prepared, finished and labelled, and all the results of his study compared and worked over and over again. His extraordinary severity in these matters led him to publish much less than he otherwise might well have done.

Professor Eaton was very conservative in regard to changes in scientific methods and views. He was loth to part with what he considered good until he was absolutely convinced that he might obtain something better. But when the better had really been demonstrated he lost no time in changing either views or methods. His attitude toward the various proposed changes in the rules for governing the nomenclature is a good case in point. While anxious that there should be no blind adherence to rules already established, and perfectly ready to accept such changes as might lessen such confusion as already really existed, he viewed retroactive measures overturning hosts of names already long and firmly established in the literature as productive of great immediate confusion without giving by any means a certain promise of surer criteria upon which to establish stability in the future; in fact as giving no greater certainty, if as great, as that given by the rules already existing and followed for years by the best workers.

As a teacher he was kindly and inspiring, not suited to manage large classes of unwilling students, such as often fell to his lot, where much sternness and rigor was needed to compel the wavering attention and to force the stubborn mind to effort, but especially fitted to encourage and to train those desirous of pur-

suings either some especial line or even of obtaining a general botanical education. To these he tendered the privileges of his library and collections, which had to be supported by himself alone, and opened to them not only all the material resources at his command, but unlocked for them all the treasures of his own experience, the results of the patient study of many years.

Professor Eaton's religious views were shown rather in the earnestness and simplicity of his life than by any profession of faith. Where he could not thoroughly understand and believe he was contented to hope, and his last months, even during intense suffering, were hopeful and peaceful, and he left this life calm in his trust in the good to come. He was a communicant of the Episcopal Church, and attendance upon divine worship was to him a pleasure and an inspiration rather than a duty. At his particular request, his funeral services were of the nature of simple religious consolation to his relatives and friends, with an entire absence of official ceremony.

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[Reprinted without change in the 2d Edition, 1885.]

Filices Wrightianæ et Fendlerianæ, nempe Wrightianæ Cubenses et Fendlerianæ Venezuelanæ (nonnullis Panamensibus, etc., ex coll. A. Schott et S. Hayes interjectis)

* The basis for the present list was taken from the "Bibliographies of the present officers of Yale University," edited by Prof. Irving Fisher (New Haven, 1893). The list of works there given was written out by Prof. Eaton. This has been followed in the main, but the greater part of the references have been compared and some changes and additions made. The writer is very much indebted to Mrs. Eaton, to Mr. George F. Eaton and to Prof. W. H. Brewer for much help, both in connection with the details of the bibliography and of the sketch of the life of Prof. Eaton.